

Title: DISPLAY DEVICE FOR BEVERAGE PITCHER OR COFFEE MACHINE

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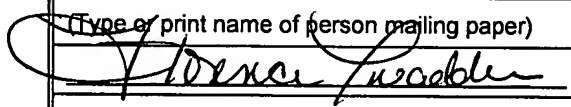
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## DISPLAY DEVICE FOR BEVERAGE PITCHER OR COFFEE MACHINE

### Field of the Invention

This invention relates to improved methods and apparatus concerning providing signs or symbols to indicate the contents of beverage pitchers.

### Background of the Invention

U.S. Patent No. 6,564,696 to Koncelik discloses an indicator device which provides an indication of whether coffee which has been prepared is decaffeinated or non-decaffeinated. After an operator has set the indicator device to, for example, "decafe", the indicator device remains in a state which indicates "decafe" until the indicator device is changed by an individual.

### Summary of the Invention

The present invention in one or more embodiments provides an apparatus comprising a timer circuit, and an indicator or display device which communicates with the timer circuit. The indicator device can be placed in a first or second state by an operator. In the first state the indicator device provides a first visual indication of a first type of beverage within a beverage receptacle. In the second state the indicator device provides a second visual indication of a second type of beverage within the beverage receptacle, wherein the second type of beverage differs from the first type of beverage.

The timer circuit can be programmed to automatically change the indicator device after a certain period of time, from the first or second state to a third state, wherein in the third state, the indicator device no longer provides a visual indication of what type of beverage is within the

beverage receptacle. The beverage receptacle may be a coffee pot or a coffee machine. The first type of beverage may be non-decaffeinated coffee, and the second type of beverage may be decaffeinated coffee. The timer circuit and the indicator device can be attached or detached from a coffee machine.

The first visual indication may be a designation of the first type of beverage and may be comprised of least one alphanumeric character. The second visual indication may be a designation of the second type of beverage and may be comprised of at least one alphanumeric character.

The indicator device may be comprised of a first light under a first designation which indicates decaffeinated coffee, and a second light under a second designation which indicates non decaffeinated coffee. The first light may be part of a first push button which can be pushed in to light the first light to indicate that decaffeinated coffee has been made. The second light may be part of a second push button which can be pushed in to light the second light to indicate that non decaffeinated coffee has been made. The indicator device may be comprised of a first light which is able to emit either a first or a second color light. The first light may emit the first color light when the coffee machine has made decaffeinated coffee and the first light may emit the second color light when the coffee machine has made non decaffeinated coffee.

The indicator device may include an electronic digital display which displays whether coffee which has been made by a coffee machine is non decaffeinated or decaffeinated. The indicator device may further include a first push button which when pushed in causes the electronic digital display to toggle from displaying an indication that the coffee is decaffeinated to displaying an indication that the coffee is non decaffeinated.

A method is also provided comprising fixing an indicator device and a timer circuit on a coffee machine, wherein the indicator device can be placed into a first state or a second state by

an operator. When the indicator device is placed in a first state, the indicator device provides a first visual indication of a first type of beverage which is within a coffee receptacle. When the indicator device is placed in a second state the indicator device provides a second visual indication of a second type of beverage which is within the coffee receptacle. The timer circuit, after a certain period of time, may cause the indicator device to automatically change from the first or second state to a third state in which the indicator device does not indicate what type of beverage is within the coffee receptacle.

#### Brief Description of the Drawings

Fig. 1 shows a coffee machine in accordance with an embodiment of the present invention including an indicator or display device showing a light under a designation to indicate whether coffee which has been prepared in a coffee pot is regular or decaffeinated;

Fig. 2 shows a coffee machine in accordance with another embodiment of the present invention including an indicator or display device showing only a light, which may be one of two colors, to indicate whether coffee which has been prepared in a coffee pot is regular or decaffeinated;

Fig. 3 shows a coffee machine in accordance with another embodiment of the present invention having an indicator or display device which includes a push button and a electronic digital display to indicate whether coffee which has been prepared in a coffee pot is regular or decaffeinated and a coffee pot ;

Fig. 4 shows a commercial electric coffee machine including a spigot in accordance with another embodiment of the present invention having an indicator or display device to indicate whether coffee which has been prepared is regular or decaffeinated; and

Fig. 5 shows a backing of the display device of Fig. 4.

### Detailed Description of the Drawings

Fig. 1 shows a coffee machine 1 in accordance with an embodiment of the present invention including an indicator device 17. The coffee machine 1 includes an extension 10, portions 12, 14, 16, indicator device 18, control panel 22, power cord 25 (shown partially) which may be electrically connected to a power outlet, base 24, and legs 26 and 28. The coffee machine 1 may be similar to or identical to known available coffee machines, such as "Mr. Coffee" (Trademarked) except for some additional components which will be described. Fig. 1 also shows a coffee pot 50 having an opening 52 for receiving coffee from the coffee machine 1, a handle 54 and a receptacle 56 in which the coffee is stored.

The indicator device 17 includes push button lights 18 and 20 which are under designation "Decaf" 18a and "Coffee" 20a respectively. The push button lights 18 and 20 are both toggle switches and as such if they are turned off, they will light up when pushed, and if they are turned on, they will turn off when pushed in.

If an individual has made decaffeinated coffee in the coffee pot 50 they may cause the push button light 18 to light and cause the push button light 20 to stay off. Thus light 18 is lit under designation 18a for "Decaf". If an individual has made regular coffee in the coffee pot 50 they may cause the push button light 20 to turn off and cause the push button light 18 to stay on. Thus light 20 is lit under designation 18a for "Coffee". In this way, any person who wants to have a cup of coffee from the coffee pot 50 will know whether it is coffee (i.e. regular non-decaffeinated coffee) or decaffeinated coffee.

The push button lights 18 and 20 will also turn off when turned off by a timer circuit 30. The timer circuit 30 is electrically connected to the indicator device 17 by bus 30a. The timer circuit 30 may also be electrically connected to a hot plate device 32. The hot plate device 32

may provide a signal to the timer circuit 30 when the hot plate device 32 is not longer heating the coffee pot 50. In response to such a signal the timer circuit 30 may send a signal via bus 30a to turn off both lights 18 and 20, if they are on. When the decaffeinated push button light 18 is pushed the light 18 goes on. In addition, a signal may be sent to the timer circuit 30 starting a timer, such as a one hour timer. After an hour, the timer circuit 30 may send a signal via bus 30a to the indicator device 17 which will turn off the light 18.

Fig. 2 shows a coffee machine 100 in accordance with another embodiment of the present invention including an indicator device 118 which is only a light in this example and which may emit one of two colors, to indicate whether coffee which has been prepared in a coffee pot 150 is regular or decaffeinated. The coffee machine 100 may be similar to coffee machine 1 except to the difference between indicator device 17 and indicator device 118, and other differences which will be described. Coffee machine 100 includes an extension 110, portions 112, 114, 116, indicator device 118, control panel 122, power cord 125 (shown partially) which may be electrically connected to a power outlet, base 124, and legs 126 and 128. Fig. 2 also shows a coffee pot 150 having an opening 152 for receiving coffee from the coffee machine 100, a handle 154 and a receptacle 156 in which the coffee is stored.

The indicator device 118 is a push button single light which can be toggled to emit either a green color light, a red color light, or to emit no light at all, i.e. be turned off. An individual can use, for example, green to indicate that Decaffeinated coffee has been made in coffee pot 150 and red to indicate that regular coffee has been made in coffee pot 150.

The coffee machine also includes a timer circuit 130 and a hot plate 132. The timer circuit 130 is electrically connected to the indicator device 118 via bus 130a. The timer circuit 130 is also electrically connected to the hot plate 132 via bus 132a.

In operation, after an individual pushes the push button 118 to, for example, light a green

color, the timer circuit 130 may be sent a signal from the button 118 to cause, for example, a one hour timer to start. After the one hour timer expires, the timer circuit 130 may send a signal to the button 118, via bus 130a, which will cause the button to go dark, i.e. be turned off.

The timer circuit 130 may also receive a signal from the hot plate 132, indicating that the hot plate 132 has turned off. The timer circuit 130 in response to the hot plate 132 turning off, may send a signal to the button 118, to turn the light of the button 118 off.

Fig. 3 shows a coffee machine 200 in accordance with another embodiment of the present invention having an indicator device 217 which includes a push button 219 and a electronic digital display 218 to indicate whether coffee which has been prepared in a coffee pot 250 is regular or decaffeinated. The coffee machine 200 may be identical to coffee machine 100 except for the difference between indicator device 118 and the indicator device 217. Coffee machine 200 includes an extension 210, portions 212, 214, 216, indicator device 217, control panel 222, power cord 225 (shown partially) which may be electrically connected to a power outlet, base 224, and legs 226 and 228. Fig. 3 also shows a coffee pot 250 having an opening 252 for receiving coffee from the coffee machine 200, a handle 254 and a receptacle 256 in which the coffee is stored.

An individual can set the electronic digital display 218 to a "Decaf" 218a designation as in Fig. 3 by pressing the push button 219 a certain number of times. When the push button 219 is next pressed the designation on the digital display 218 may turn to a "Coffee" designation. The push button 219 may be a toggle switch which toggles the "Decaf" and "Coffee" designations on the display 218.

The coffee machine 200 may also include a timing circuit 230 which may be electrically connected to the indicator device 217 by a bus 230a. The coffee machine 200 may also include a hot plate 232 which may be electrically connected to the timing circuit 230 by bus 232a.

In operation, after an individual pushes the push button 219 to, for example, cause the

word "Decafe" to appear on the display 218, the timer circuit 230 may be sent a signal from the button 219 and/or indicator device 217 to cause, for example, a one hour timer to start. After the one hour timer expires, the timer circuit 230 may send a signal to the digital display 218, via bus 230a, which may cause the digital display 218 to go dark, to show a blank screen, or to indicate in some other way that the time has expired and that type of coffee can either no longer be determined or the indication of the type of coffee must be verified or updated.

The timer circuit 230 may also receive a signal from the hot plate 232, indicating that the hot plate 232 has been turned off. The hot plate 232 may be used to heat coffee pot 250. The timer circuit 130 in response to the hot plate 232 turning off, may send a signal to the digital display 218 via bus 232a to turn the digital display 218 to go dark, to show a blank screen, or to indicate in some other way that the time has expired and that the type of coffee can either no longer be determined or the indication of the type of coffee must be verified or updated.

Fig. 4 shows a commercial electric coffee machine 300 in accordance with another embodiment of the present invention. The machine 300 includes receptacle 304, spigot switch 314, spigot 316, power cord 312 for connecting to an electrical outlet, base 306, legs 308 and 310, and display device or indicator device 350. The display device or indicator device 350 may be detachable from the rest of coffee machine 300. The display device or indicator device 350 may include a digital display 318 and a button 319. The display device 350 may further include a timer circuit 330 electrically connected to the digital display 318 by a bus 330a. The display device 350 may function similar to the device 217 and timer circuit 230 shown in Fig. 3. Instead of the display device 350, the timer circuit 30 and device 17 can be used or the timer circuit 130 and the button 118 can be used.

The spigot switch 314, when pressed downwards in a direction D, allows coffee to flow from the receptacle 304 through the spigot 316 and out of the coffee machine 300. The machine



300 may be similar to those known in the art with the exception of indicator device 350. The indicator device 350 may be provided or sold separately. The indicator device 350 may include an adhesive backing for attaching or detaching the indicator device 350 to or from the machine 300. The indicator device 350 may include a "Decafe" designation 318a which is shown and a "coffee" designation which is not shown. The indicator device 350 can be fixed to the receptacle 304 and part of the machine 300.

Fig. 10 shows a backside 350b of the display device 350 of Fig. 4. The backside is made of an adhesive material which can stick to, for example, machine 300 in Fig. 4, to temporarily attach the device 350 to machine 300.

The timer circuit 30 and/or device 17 of Fig. 1, timer circuit 130 and/or button 118 of Fig. 2, or the timer circuit 230 and/or device 317 of Fig. 3, could take the place of, a warmer light on an automatic coffee pot. Thus, when the person making the coffee pushes a button that says "coffee" two things would happen--the warmer plate, such as warmer or hot plate 32 of Fig. 1 would go on, and a light, such as light 20 would go on lighting up the words, "Coffee" or providing a light under the word "Coffee". The timer circuits 30, 130, and 230 can be programmed through control panel 22, 122, and 222, via busses 22a, 122a, and 222a, respectively, to cause the devices 17, 118, and 317, respectively, to go out after a set time--a time that can be programmed in by the user. The control panels 22, 122, and 222 may include a keypad for data entry. The timer circuits 30, 130, and 230 can also be programmed to cause the devices 17, 118, and 317, respectively to go off when the warmer or hot plates 32, 132, and 232, respectively, go off.

By having the selection display go out after a certain amount of time, the coffee user will always be assured that each time a new pot is made, the maker would have had to affirmatively select either decafe or Coffee or perhaps decafe/coffee mix if that is what is contained in the

pot.

Although the invention has been described by reference to particular illustrative embodiments thereof, many changes and modifications of the invention may become apparent to those skilled in the art without departing from the spirit and scope of the invention. It is therefore intended to include within this patent all such changes and modifications as may reasonably and properly be included within the scope of the present invention's contribution to the art.